

CLAIMS:

1. A method of forming an earplug, comprising:
providing a sheet of a compressible, resilient material;
positioning the sheet proximate a water jet assembly;
activating the water jet assembly to emit a high pressure water stream; and
contacting the sheet with the water stream cutting the sheet and severing the earplug from the sheet.
2. The method of claim 1, wherein said providing the sheet comprises forming the sheet to include a thickness substantially equal to a length of the earplug.
3. The method of claim 1, wherein said cutting the sheet comprises contacting the sheet with the water stream substantially perpendicular to a top surface thereof and traversing circular patterns on the sheet to sever the earplug from the sheet, the earplug being substantially cylindrical in shape.
4. The method of claim 1, wherein said positioning the sheet comprises conveying the sheet using a conveyor belt and depositing the sheet on a slat.
5. The method of claim 1, wherein said activating the water jet assembly comprises a computer controller controlling a pump for generating the high pressure water stream.
6. The method of claim 5, further comprising catching the high pressure water stream in a catching tank after said cutting and severing, filtering said water after said catching, and pressurizing said water after said filtering.
7. The method of claim 1, wherein the high pressure water stream includes a pressure of approximately 50,000 pounds per square inch.

8. The method of claim 1, wherein the high pressure water stream is emitted through an orifice having a diameter of approximately 0.005 to 0.010 inches.

9. The method of claim 8, wherein said orifice is formed in a ruby or a sapphire or a diamond jewel.

10. The method of claim 1, wherein said cutting comprises forming a kerf in the sheet, the kerf having a width of approximately 0.005 to 0.020 inches.

11. The method of claim 1, further comprising piercing the sheet with the high pressure water stream forming a hole therein then said cutting the sheet around the hole such that the severed earplug includes the hole.

12. The method of claim 1, further comprising piercing the severed earplug with the high pressure water stream forming a hole therein, said piercing occurring after said severing.

13. The method of claim 12, wherein the hole is formed extending along a longitudinal axis of the earplug entirely through the earplug.

14. The method of claim 12, further comprising inserting an item in the hole and bonding the item to the earplug at the hole.

15. The method of claim 14, wherein the item comprises at least one of a stem, a metal detectable insert, or an end of a cord.

16. The method of claim 1, further comprising contacting a portion of a surface of the earplug with the high pressure water stream to ablate the portion, forming a detail on the surface.

17. The method of claim 16, wherein the detail is etched into the surface so as to be inset therein.

18. The method of claim 16, wherein the portion of the surface is removed to form the detail in relief.

19. The method of claim 16, wherein the detail comprises at least one of an a pattern and an angled shaping.

20. The method of claim 19, wherein the angled shaping comprises tapered side portions providing the earplug with at least one of a conical, frustoconical, an pyramidal shape.

21. The method of claim 1, wherein said contacting the sheet comprises engaging the sheet with the water stream at an angle to a longitudinal axis of the earplug and wherein said cutting the sheet and said severing the earplug comprises tracing an end of the earplug on a top surface of the sheet while maintaining the angle of the water stream relative to the longitudinal axis to form the earplug including a conical or pyramidal shape.

22. A method of forming an earplug, comprising:
forming a sheet of resilient, compressible full-recovery foam material;
conveying the foam sheet to a water jet cutting assembly;
depositing the foam sheet on a slat;
pressurizing water in the water jet cutting assembly with a pump;
delivering the pressurized water through a jewel in a high pressure stream;
contacting the foam sheet with the high pressure stream; and
maneuvering the high pressure stream to cut the foam sheet, shape the earplug, and sever the earplug from the foam sheet.

23. The method of claim 22, wherein said contacting the sheet comprises engaging the sheet with the water stream at an angle to a longitudinal axis of the earplug and wherein said cutting the sheet and said severing the earplug comprises tracing an end of the earplug on a top surface of the sheet while maintaining the angle of the water stream relative to the longitudinal axis to form the earplug including a conical or pyramidal shape.

24. An earplug, comprising:
a portion formed by water jet cutting.

25. The earplug of claim 24, wherein said portion comprises at least one of a shape of the earplug, an ornamental detail of the earplug, and a hole formed in or through the earplug.

26. The earplug of claim 24, wherein said portion formed by water jet cutting comprises a cylindrical, conical, or pyramidal outer surface of the earplug.

27. The earplug of claim 26, wherein said portion formed by water jet cutting further comprises a hole formed through the earplug along a longitudinal axis thereof.

28. The earplug of claim 27, further comprising at least one of a stem, a metal detectable insert, or an end of a cord disposed in the hole.

29. The earplug of claim 24, further comprising a foam body portion, wherein the portion formed by water jet cutting comprises at least one of an outer surface of the body portion, an ornamental detail at the outer surface, and hole formed through the body portion along a longitudinal axis thereof.